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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,910	01/30/2004	Hiroshi Yamane	8003-1016-1	5695
466	7590	11/19/2007	EXAMINER	
YOUNG & THOMPSON			KERNs, KEVIN P	
745 SOUTH 23RD STREET			ART UNIT	PAPER NUMBER
2ND FLOOR			1793	
ARLINGTON, VA 22202			MAIL DATE	DELIVERY MODE
			11/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/766,910	YAMANE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kevin P. Kerns	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### **Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1)  Responsive to communication(s) filed on 23 August 2007 and 14 September 2007.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

- 4)  Claim(s) 1-5, 15 and 17-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-5, 15 and 17-21 is/are rejected.

7)  Claim(s) 4, 5 and 21 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 30 January 2004 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All   b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. 09/714,161.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_\_.  
\_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: on page 2 of the preliminary amendment of January 30, 2004, the status of parent application 09/714,161 should be updated to show that it has issued as US Patent No. 6,712,124. Appropriate correction is required.

### ***Claim Objections***

2. Claims 4, 5, and 21 are objected to because of the following informalities: in the 7<sup>th</sup> line of claim 4, insert "of" after "both". In the 3<sup>rd</sup> line of claim 5, replace "or/and" with "and/or". In the 9<sup>th</sup> line of claim 21, replace "electro magnets" with "electromagnets". In the 10<sup>th</sup> line of claim 21, replace "." with "," after "mold". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 15, and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 6-182518.

As to claims 1 and 4, JP '518 discloses an apparatus for continuous casting of molten metal, in which the apparatus comprises electromagnets each comprising an iron core and coil wound over the iron core, being arranged in a facing relation on opposite sides of the mold along the transverse width, and means capable to supply AC current to each coil. The iron core is comprised of comb-shaped iron core having comb-teeth. JP '518 also discloses a coil with DC current and a coil for AC current (abstract). JP '518's apparatus is capable of generating a single phase AC current, such that a single-phase means using one pair of poles, whereas a two-phase means using two pairs of poles, and a three-phase means using three pairs of poles to generate AC current. Therefore, since JP '518 discloses using a three-phase AC current, the apparatus is capable of generating a single phase AC current by not utilizing the other two pairs. Thus, the amended claims do not define over the disclosure of JP '518. Furthermore, since JP '518's core is arranged the same way as applicants' invention, the phase difference would inherently be of 0 or 180 degrees.

As to claim 2 and 3, JP '518 discloses both AC and DC current are wound on the same core.

As to claim 5, the poles are arranged above the ejection port.

As to claims 15 and 17-21, the AC current of JP '518 is capable of generating a single phase and continuous.

***Response to Arguments***

5. The examiner acknowledges the applicants' amendments provided with the request for continued examination received by the USPTO on August 23, 2007 and September 14, 2007. New specification and claim objections are raised in above sections 1 and 2. The applicants have cancelled claim 16, and have added new claim 21. Claims 1-5, 15, and 17-21 are currently under consideration in the application.

6. Applicants' arguments filed August 23, 2007 have been fully considered but they are not persuasive.

With regard to the applicants' remarks/arguments on pages 6-8 of the amendment of August 23, 2007, the applicants are referred to the new portions in the 35 USC 103(a) rejections in above section 4. With regard to the remarks/arguments on pages 6-8, the applicants' major argument continues to be that the features of the applicants' continuous casting apparatus are allegedly not disclosed by JP 6-182518. The examiner respectfully disagrees, as JP '518's apparatus is capable of generating a single phase AC current, such that a single-phase means using one pair of poles, whereas a two-phase means using two pairs of poles, and a three-phase means using three pairs of poles to generate AC current. Since JP '518 discloses using a three-phase AC current, the apparatus is capable of generating a single phase AC current by not utilizing the other two pairs. Thus, the amended claims do not define over the disclosure of JP '518. Furthermore, since JP '518's core is arranged the same way as applicants' invention, the phase difference would inherently be of 0 or 180 degrees.

**Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan Johnson can be reached on (571) 272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns *Kevin Kerns 11/7/07*  
Primary Examiner  
Art Unit 1793

KPK  
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November 7, 2007